Asian Biometrics Consortium (ABC) Activities and International Cooperation


Dr. Jason Kim
Chair of ABC (Asian Biometrics Consortium)
Director of K-NBTC (Korea National Biometrics Test Center)
KISA (Korea Internet & Security Agency)
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1) **ABC History & Mission**

**ABF**
(Asian Biometrics Forum)
- Since 2002 to 2007
- 5 Key Countries
  : Japan, Korea, Malaysia, Singapore, Taiwan

**ABC**
(Associative Biometrics Consortium)
- 1st ABC Conference in 2007
  (Inauguration of ABC in Singapore)
- 8 Members
  : China, Indonesia, Japan, Korea, Malaysia, Singapore, Taiwan, Thailand

**Present**
- 1~2, Nov. 2012
  ABC in Jeju, Korea
- ABC Roadmap 2013

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**Mission**
- Promotion Biometric Industry on Asian Countries
- Development of Asian Regional Standards for Biometrics
- Collaboration with other international organizations
- Annual Biometrics Exhibition and Conference
2) ABC 2012 in Jeju, Korea

- **ABC 2012**

  - Host by KBA (Korea Biometrics Association) & KISA (Korea Internet & Security Agency)

  ![ABC 2012 Speakers](image1)
  ![ABC 2012 Exco Meeting](image2)
  ![Invited Talk (NIST, USA)](image3)
  ![Demonstration (JP-KR)](image4)
  ![Products Exhibition (Korean Vendors)](image5)
## 2) ABC 2012 in Jeju, Korea

<table>
<thead>
<tr>
<th>TIME</th>
<th>SCHEDULE (2nd, November)</th>
<th>LOCATION</th>
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<tbody>
<tr>
<td>9:30–9:45</td>
<td>Registration</td>
<td>Lobby, Ramada Plaza 8F</td>
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<tr>
<td>9:45–10:00</td>
<td><strong>Opening Ceremony</strong></td>
<td>Tamra Hall, Ramada Plaza 8F</td>
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<td>3) Chin, Byoung Moon (Principle Researcher, TTA)</td>
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<tr>
<td>10:00–10:30</td>
<td><strong>Session I – Invite talk</strong></td>
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<tr>
<td>10:00–10:30</td>
<td>ISO/IEC JTC 1/SC 37 Biometric Standards Activities and Their Impact on Users, Industry and Academia</td>
<td>Tamra Hall, Ramada Plaza 8F</td>
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<tr>
<td></td>
<td>Fernando L. Podio (ISO/IEC SC37 Chair, NIST)</td>
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<td>10:30–10:50</td>
<td>Coffee break</td>
<td>Lobby, Ramada Plaza 8F</td>
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<tr>
<td>10:50–12:20</td>
<td><strong>Session II</strong></td>
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<td>10:50–11:10</td>
<td>Japan I</td>
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<tr>
<td></td>
<td>ACBio, Internet Enabler for Biometrics</td>
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<tr>
<td></td>
<td>Asahiko Yamada (Toshiba Solutions Corporation)</td>
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<td>11:10–11:30</td>
<td>Japan II</td>
<td>Tamra Hall, Ramada Plaza 8F</td>
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<td>Dr. Akira Otsuka (National Institute of Advanced Industrial Science and Technology)</td>
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<td>11:30–12:00</td>
<td>Japan III – Demonstration – Collaboration between Japan &amp; Korea</td>
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<td>Progress of Asian Biometric Conformity Assessment System</td>
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<td></td>
<td>Toshi Nakamura (Oki Software Co., Ltd.)</td>
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<td>12:00–12:20</td>
<td>Japan IV</td>
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<td>Development of small and slim Palm Vein sensor and its applications</td>
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<td></td>
<td>Takahiro Aoki (Fujitsu Laboratories Ltd.)</td>
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<td>12:20–14:00</td>
<td>Lunch &amp; ABC Exco Meeting</td>
<td>Lobby &amp; Ara Hall, Ramada Plaza 8F</td>
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<tr>
<td>14:00–15:00</td>
<td><strong>Session III</strong></td>
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<td>14:00–14:20</td>
<td>Malaysia I</td>
<td>Tamra Hall, Ramada Plaza 5F</td>
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<td>Multimodal Biometrics Identification and Verification System</td>
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<td></td>
<td>Dr. Sheikh Hussain Shaikh Salleh (Universiti Teknologi Malaysia)</td>
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<td>14:20–14:40</td>
<td>Malaysia II</td>
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<td>Research on Finger Vein Recognition in Universiti Sains Malaysia</td>
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<td>Dr. Bakhtiar Affendi Rosdi (Universiti Sains Malaysia)</td>
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## 2) ABC 2012 in Jeju, Korea

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<th>TIME</th>
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| 14:40–15:00 | **Malaysia III**  
Audio–based Biometric System Research  
Dr. Dzati Athiar Ramli (Universiti Sains Malaysia) | Tamra Hall, Ramada Plaza 8F     |
| 15:00–15:20 | **Coffee Break**                                                                          | Lobby, Ramada Plaza 8F          |
| 15:20–16:00 | **Session IV**                                                                            |                                 |
| 15:20–15:40 | **Taiwan**  
UID project in India (STQC Certificate)  
Mr. Allan Lin (National Tsing Hua University) | Tamra Hall, Ramada Plaza 8F     |
| 15:40–16:00 | **China**  
Recent Progress of Biometrics Research at CASIA  
Dr. Ran He(The National Laboratory of Pattern Recognition, Institute of Automation, Chinese Academy of Sciences) |                                 |
| 16:00–16:20 | **Coffee Break**                                                                          | Lobby, Ramada Plaza 8F          |
| 16:20–17:40 | **Session V**                                                                             |                                 |
| 16:20–16:40 | **Korea I**  
Fast Fingerprint Identification and Performance Evaluation  
Prof. Hale Kim (Inha University) |                                 |
| 16:40–17:00 | **Korea II**  
Toward Unconstrained Facial Biometrics Under Visual Surveillance  
Dr. Jung, Sung Uk (ETRI) | Tamra Hall, Ramada Plaza 8F     |
| 17:00–17:20 | **Korea III**  
Biometrics Research Activities of BERC  
Prof. Park, Kang Ryoung (Dongguk University) |                                 |
| 17:20–17:40 | **Korea IV**  
Recent Standard Activities on Mobile Biometrics in Korea  
Dr. Byung Hee Lee (KISA) |                                 |
| 17:40–18:00 | **Coffee Break**                                                                          | Lobby, Ramada Plaza 8F          |
| 18:00–18:30 | **Finishing & Photo Time**                                                                | Tamra Hall, Ramada Plaza 8F     |
| 18:30–19:00 | Break Time for preparing the Banquet Hall                                                | –                               |
| 19:00–21:00 | **Dinner & Banquet**  
Korean Biometrics & CCTV Product Exhibition | Halla Hall, Ramada Plaza 8F     |
TOPIC 1

- **Following Chair & Co-chair**: Dr. Jason Kim (KISA, Korea) & Prof. Wen-Hsing Hsu (National Tsing Hua Uni., Taiwan), Prof. Vutipong Areekul (Thailand) – Discussion needed
- The Candidate Next Host Countries of ABC 2013 are Thailand, Australia, Taiwan

TOPIC 2

- **Conformity Assessment Cooperation in Asia**
  - Make the other ABC members (China, Singapore, Taiwan) take part in this project (2013~2014)
  - Conformity Assessment Environment is highly needed in Asia, such as Web-based BioAPI Conformance Test and Web-based Performance Test.
  - Hope to develop the common test procedures and report them for the Asian countries (one test report for common ABC countries)

TOPIC 3

- **ABC Future Visions**
  - Build ABC Roadmap 2013
  - ABC Cooperation with other organizations (such as ‘Biometric Consortium’ - USA, ‘European Association of Biometrics’ of the EU, ‘Biometric Working Group’ of the UK and ‘Biometric Institute’ of Australia, ASEAN), etc.
  - Visit Brussels (Belgium) next February (2013) to attend the European Biometrics Symposium by EAB and contract the MOU between ABC and EAB

JP-KR-TW Meeting in Japan Conformity Assessment in Asia 2013.02.12-13

[EAB&ABC] European Biometrics Symposium MOU Contract 2013.02.15


[ASEAN&ABC] ID Project
Biometrics applications

Atrix: Fingerprint smart sensor

Galaxy Nexus: Face Unlock (Facial Recognition)

Apple patent

The Biometric Sensor: Information also may be acquired through a biometric sensor (Patent Point # 45 of FIG. 1), as for example:

- The biometric sensor may include a fingerprint reader or other feature recognition device and may operate in conjunction with a feature-processing program stored on the iPhone.
4) Research Topics of ABC (Mobile Biometrics)

- New-convergence Technologies on Mobile Biometrics
4) RESEARCH TOPICS OF ABC (China)

- PERSON RE-IDENTIFICATION USING BIOMETRICS & CCTV

Unconstrained face recognition
- Unconstrained face recognition - challenging task

ABC2011, China

ABC2012, China CASIA
4) RESEARCH TOPICS OF ABC (JAPAN)

► E-HEALTH & MOBILE BIOMETRICS

ABC2011, Japan Nagasaki Univ.

ABC2012, Japan Toshiba & Fujitsu
4) RESEARCH TOPICS OF ABC (SINGAPORE)

► BORDER-CROSSING & IMMIGRATION USING MOBILE BIOMETRICS

Handheld Scanners

Desktop Scanners

ABC2011, Singapore
4) Research Topics of ABC (Malaysia)

> Medical Biometrics

**Perfect Match**

Our biometrics + medical biometrics i.e. identify + monitor health at the same time!!

**Iridology Chart**

**ECG-Heart-Speech Multimodal**

First heart sound, "lub", occurs when atrioventricular valves close

Second heart sound, "dup", occurs when semilunar valves close

**Best fusion with Simple Sum and Piecewise Linear**

ABC2011, Technology Malaysia Univ.

ABC2012, Technology Malaysia Univ.
4) Research Topics of ABC (Taiwan)

Performance Testing for Fingerprint Scanner

Certification Body to Evaluate Technical Construction

File (TCF) by The Supplier - for a single finger scanner

- **Certificates**
  - Certificate for ISO 9001:2008 (Certification for Biometric Device Development, Manufacturing and Service)
  - Certificate of Incorporation in India
  - PIL Certificate for Image Quality for finger print Scanner
  - IECEE-CB Certificate(EC 60950) for safety, enclosed with CB Test Report from recognized CTL or equivalent dual certification
  - WHQL Certificate for Device Driver along with test report
  - Manufacturer authorization to supplier to place devices in Indian market

- **Declaration of Conformities**
  - Declaration to compliance with RoHS and WEEE requirements
  - Declaration that supplier has a plan to make provision and comply with the notification of Government of India, Ministry of Environment and Forest regarding collection and disposal of devices/equipment at end of life applicable from May 2012

- **Test Report**
  - Image Quality, Test Procedure and Test Report
  - EMI/EMC compliance test report
  - Safety Compliance Test Report
  - UIDAI API Specification Compliance Test Report
  - Environment/Durability compliance test report
  - Performance test report or FAR of UIDAI requirements with technical rationale.
4) **Research Topics of ABC (Korea)**

- Subject of Research

- Standardization of Biometrics Testing and Information Security Technology
- Standardization of Telebiometrics Application Technology for Providing Security
- Standardization of Leading New-convergence Technology on Mobile Biometrics
- Reinforcement of International Cooperation for Mobile Biometrics Industry Promotion in Asia-Pacific Area

Development of Standards for New-convergence Technologies on Mobile Biometrics
Mobile Biometrics Standard Research Group
- Develops standards for new-convergence technologies on mobile biometrics
4) **Research Topics of ABC (Korea)**

- **Mobile Biometrics based on Smartphone**

  - **System goals**
    - Mobile Payment System based on Biometrics
      - Development of applet and interface for fingerprint MoC
      - Development for storing and managing fingerprint based on Android Smartphone
4) Research Topics of ABC (Korea)

- Mobile Biometrics based on Smartphone
4) **Research Topics of ABC (Korea)**

- **Mobile Biometrics Based on Smartphone**

  ![Diagram](https://via.placeholder.com/150)

  - **Bio Certification**
    - Enrollment of bio cert.
  - **Mobile Payment**
    - Enrollment of the payment information
  - **Mobile Account Transfer**
    - Enrollment of the account information

  **Authentication using fingerprint**

  - **Result**
  - **Result**
  - **Result**
4) Research Topics of ABC (Korea)

► Mobile Biometrics based on Smartphone

- Target Model(1)
  - Enrollment of Bio Cert.

Input user’s fingerprint for issuing bio certification

Bio certification issue is completed
4) **Research Topics of ABC (Korea)**

**Mobile Biometrics based on Smartphone**

- Target Model (2)
  - Mobile Account Transfer

- **Input account information**
- **Authenticate user by using enrolled fingerprint**
- **Account transfer is completed**
4) RESEARCH TOPICS OF ABC (KOREA)

- MOBILE BIOMETRICS BASED ON SMARTPHONE

Target Model (3)
- Mobile Payment

Input payment information (e.g., product, price, etc.)
Authenticate user by using enrolled fingerprint
Payment is completed
4) Research Topics of ABC (Korea)

Future work for Mobile Biometrics

- Development of standard method for storing biometrics information on smartphone
  - Storage media (e.g. MicroSD or USIM), data exchange format (compliant to e-passport)

- Development of standard for mobile biometric application technologies
  - Medical Biometrics, e-Payment etc.

5) INTERNATIONAL COLLABORATION WORKS

1. COLLABORATIVE PROJECT FOR UNIFIED CONFORMITY ASSESSMENT BETWEEN KOREA(KISA) AND JAPAN(JAISA)

Envisioning our final goal of conformance testing for biometrics...

Korea-Japan collaboration

One or two years later...

- Two test centers
- Thirty vendors(?)

Asian collaboration

Several years later...

- Several test centers
- Fifty vendors(?)

Global collaboration

Ten or more years later...

- Twenty or more test centers
- Hundreds of vendors
There may be some national projects and some big private projects, in which they wish to build their own test servers in various locations in the world.

Imagine one possible future...

There are many biometric vendors in the world. Some are emerging and some are disappearing.

Each vendor has to access to number of test servers for certification. Imagine all the vendors sharing all the servers...
If the unification to conformance testing cannot be done, there will be some issues:

- **Issue 1:** Vendors have to install different test modules to their computer
- **Issue 2:** Lack of unification causes difficulties in collaboration between test servers
5) **INTERNATIONAL COLLABORATION WORKS**

4. **COLLABORATIVE PROJECT FOR UNIFIED CONFORMITY ASSESSMENT BETWEEN KOREA(KISA K-NBTC) AND JAPAN(JAISA)**

### Unified Collaboration Protocol

- **Test Server A with Unified Architecture**
  - CTS Plug-in
  - BioAPI V3.0
  - Fingerprint Data Format

- **Test Server B with Unified Architecture**
  - CTS Plug-in
  - BioAPI V2.2
  - Vascular Data Format Level 1,2

- **Test Server C with Unified Architecture**
  - CTS Plug-in
  - Fingerprint Data Format Level 1,2,3
  - Face Data Format Level 1,2,3

### Unified Test Protocol

- **Unified Test Module**

- **Vendor**
5) INTERNATIONAL COLLABORATION WORKS

5. MoU with EAB and ABC (Feb.15.2013, EAB2013 Brussel)

Memorandum of Understanding

The undersigned parties:
- European Association for Biometrics (hereafter to be called ‘EAB’ and rightfully represented by Mr. Alexander Noukis, Chairman of the EAB)
- Asian Biometrics Consortium (hereafter to be called ‘ABC’ and rightfully represented by Jason Kim, Chairman of the ABC)

Whereas:
- The EAB is a European multi stakeholder association providing a forum regarding biometrics and human-identity in Europe;
- The ABC is a forum for Asia wherein leading biometric researchers, vendors and practitioners can share their latest findings and experiences and engage in discussion towards successful collaboration and co-operation;
- Both organizations have agreed that cooperation will be beneficial for achieving their goals and objectives regarding the development of proper and beneficial use of biometrics;

The parties reach a partnership agreement regarding the following areas of interest:
- Information exchange between members and associated communities;
- Undertaking joint efforts on education and training regarding various aspects of biometric and smart security devices, such as target market, use cases, business models, functional technical integration, standardization and testing;
- Cooperation on various activities, such as joint workshops, seminars, production of educational materials, standards development and testing/evaluation;
- Mutual involvement of members from both organizations in relevant activities;
- Dissemination of industrial, academic and governmental information, focusing on research and development, project development and implementation, and industrial excellence.

Both parties agree to formalize this MoU into a definitive agreement no later than 1 September 2013.

Undersigned for agreement in Brussels, 15 February 2013,

Alexander Noukis, Chairman
On behalf of the EAB

Dr. Jason Kim, Chairman
On behalf of the ABC
Roadmap for CTS_BioAPI v3

5) INTERNATIONAL COLLABORATION WORKS

6. FUTURE COLLABORATION PROJECTS FOR CTS_BIOAPIv3

CTS_BioAPIv3 Co-Projects (Univ, KISA)

- C++ CTS (KISA K-NBTC)
  - CTSv1_ANSI
  - CTSv2_BioAPIv2
  - Web-based CTS_Framework-Free BioAPIv2
- Java CTS (Univ, KISA)
- C# CTS (Univ, KISA)
- C ver. (Rev.2012.1, ANSI)
- Java ver. (US NIST)
- C# ver. (Spain)
- BioAPI v3.0 (ISO/IEC JTC1 SC37-WG2)

CTS (Korea CTS Test Service for BioAPIv3)

'13. ABC Co-Projects for Web-based CTS for BioAPIv2
- Develop CTS_BioAPI v3
- Develop Web-based CTS_BioAPIv3
- Develop CTS_BioAPIv3 using Java,"C#

ABC

“Asian Biometric Conformity Assessment”

BC, EAB, others groups
Collaborative Projects

☞ CTS (Conformance Test Suite), ABC (Asian Biometrics Consortium)
BC (Biometrics Consortium, USA), EAB (European Association for Biometrics)
6) **Collaboration Proposal For BC and ABC**

- **Collaborative Projects between BC and ABC**
  - Collaborative Development of Web-based BioAPI Conformance Test Suite for BC and ABC members
  - Sharing Test Techniques and Experiences for Biometrics

- **BC Participation on ABC International Conference**
  - Invited Talk of BC experts on ABC Conference 2014
  - BC Activities and American Biometric Topics
Dr. Jason Kim, Director of KISA K-NBTC
Chair of Asian Biometrics Consortium, Editor for ISO/IEC SC37 & ITU-T SG17 Q9
Chair of TTA PG505(Biometrics), Financial Security WG for Korea Financial Telecomm. & Clearings Institute in Korea

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